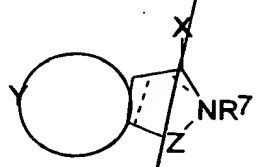
ATTORNEY DOCKET NO. 23356-M5

We claim:

1. A compound of formula I containing at least one ring nitrogen:

I



or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

R^7, when present, is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$;

(v) $-C(O)-NR^7-$; or

(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, -

NO_2, $COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

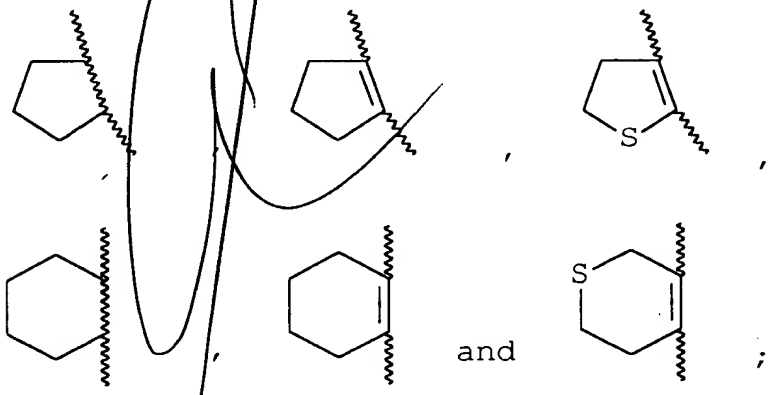
wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino;

with the provisos that:

(a) when X is double-bonded oxygen, and Z is $-CHR^2CHR^3-$, R^3 cannot be hydrogen or methyl;

(b) when X is double-bonded oxygen, and Z is $-R^6C=CR^3-$, R^3 cannot be methyl, phenyl, or $-(CH_2)_4-C\equiv CH$;

(c) when R^3 and R^6 are taken together to form a fused aromatic ring, Y cannot be a ring selected from the group consisting of:



;

(d) when X, Y and Z, taken together, form a phenanthridone, a phenanthridinone, a phenanthrene, or a phenanthridine nucleus with an amino group or an aminoalkoxylene group in the 3-position, the 8-position cannot also be substituted with an amino group or an aminoalkoxylene group; and

(e) when X is a double bonded oxygen, and Z is a 6-membered unsaturated ring, and Y is phenyl, then the 2-position of the Z-ring cannot be substituted

with a hydrogen or a nitro group;

(f) when X is -OH or double bonded oxygen and Z is -CH=CH-, then Y is not phenyl or 5-hydroxyphenyl;

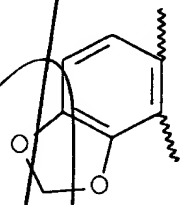
(g) when X is a double bonded oxygen, and Z is -CH=N-, then Y is not phenyl;

(h) when X is a double bonded oxygen, and Z is -C(O)NH-, then Y is not aminophenyl.

2. The compound of claim 1, wherein X is double-bonded oxygen.

3. The compound of claim 1, wherein Y has at least one site of unsaturation.

4. The compound of claim 1, wherein Y represents the atoms necessary to form a fused phenyl, naphthalene ring, or



5. The compound of claim 1, wherein Y is substituted with at least one non-hydrogen, non-interfering substituent.

6. The compound of claim 5, wherein said substituent is selected from the group consisting of $-NO_2$, halo, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, aralkyl, $-COOR^1$, $-OR^1$ or $-NHR^1$, where R^1 is hydrogen, lower alkyl, or aralkyl.

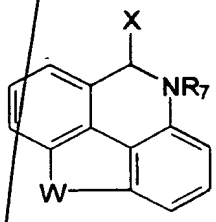
7. The compound of claim 1, wherein Z is (i) $-CHR^2CHR^3-$, (ii) $-R^6C=CR^3-$, or (iii) $-R^2C=N-$.

8. The compound of claim 1, wherein Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form a fused aromatic ring.

9. The compound of claim 8, wherein said ring is substituted with at least one non-hydrogen substituent

selected from the group consisting of halo, amino, nitro, hydroxy, piperidine, piperazine, imidazolidine, dimethylamino, aryl, and arylalkyl.

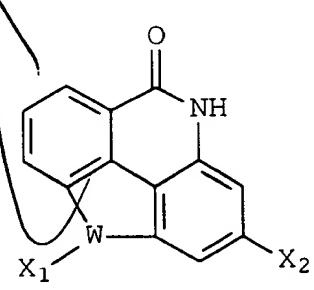
10. The compound of claim 1, wherein said compound has an isoquinoline, a pteridine, a phenanthridine, a phthalazine, or a quinazoline nucleus, or a tetracyclic bridging structure to ring Y, having the formula:



where W is -O-, -S-, $-NR^1-$, -CHO, -CHOH, or $-CHNH_2$ where R^1 is hydrogen or lower alkyl.

11. The compound of claim 10, wherein said compound has a phenanthridine nucleus.

12. The compound of claim 1, wherein said compound has a tetracyclic bridging structure to ring Y, having the formula:



where W is -CH-; X_1 is hydrogen, hydroxy, or amino; and X_2 is hydrogen, amino, 1-piperidine, 1-piperazine, 1-imidazolidine, or hydroxy.

13. The compound of claim 1, wherein R^7, when present, is hydrogen.

14. The compound of claim 1, wherein said compound has

an IC_{50} for inhibiting poly(ADP-ribose) polymerase *in vitro* of 25 uM or lower.

15. The compound of claim 1, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring substituted with a chloro group.

16. The compound of claim 1, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring substituted with a bromo group.

17. The compound of claim 1, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring substituted with a $-NO_2$ group; and
Z is $-R^6C=CR^3-$ where, R^6 and R^3, taken together, form a fused benzene ring substituted with an amino group.

18. The compound of claim 1, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring with a bridging substituent connecting the Z ring with the Y ring.

19. The compound of claim 1, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form a fused benzene ring substituted with an $-NO_2$ group.

20. The compound of claim 1, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring carrying at least one non-hydrogen, non-interfering substituent; and

Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form an unsubstituted fused benzene ring.

21. The compound of claim 1, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring carrying a chloro substituent; and
Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form a fused benzene ring substituted with a chloro group.

22. The compound of claim 1, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^6 and R^6, taken together, form a fused benzene ring substituted with a -Br and a $-NO_2$ group.

23. The compound of claim 1, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R_6C=CR^3-$ where R^6 and R^3, taken together, form a fused naphthalene ring.

24. The compound of claim 1, wherein said compound is 5(*H*)2-chloro-10-methylphenanthridin-6-one.

25. The compound of claim 1, wherein said compound is 5(*H*)2-nitro-10-methylphenanthridin-6-one.

26. The compound of claim 1, wherein said compound is 5(*H*)2-chloro-10-aminophenanthridin-6-one.

27. The compound of claim 1, wherein said compound is 5(*H*)2-nitro-10-aminophenanthridin-6-one.

28. The compound of claim 1, wherein said compound is 5(*H*) 2-chloro-10-nitrophenanthridin-6-one.

29. The compound of claim 1, wherein said compound is 5(*H*)2,10-dinitrophenanthridin-6-one.

30. The compound of claim 1, wherein said compound is 5(*H*)2-chloro-10-hydroxyphenanthridin-6-one.

31. The compound of claim 1, wherein said compound is 5(*H*)2-nitro-10-hydroxyphenanthridin-6-one.

32. The compound of claim 1, wherein said compound is 5(*H*)2-chloro-10-bromophenanthridin-6-one.

33. The compound of claim 1, wherein said compound is 5(*H*)2-nitro-10-bromophenanthridin-6-one.

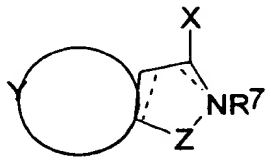
34. The compound of claim 1, wherein said compound is 5(*H*)2-chloro-10-nitrosophenanthridin-6-one.

35. The compound of claim 1, wherein said compound is 5(*H*)2-chloro-9,10-methylenedihydroxyphenan-thridin-6-one.

36. The compound of claim 1, wherein said compound is 5(*H*)2-nitro-9,10-methylenedihydroxyphenan-thridin-6-one.

37. A pharmaceutical composition comprising a compound of formula I containing at least one ring nitrogen:

I



or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

R^7, when present, is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;
(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;
(iii) $-R^2C=N-$;
(iv) $-CR^2(OH)-NR^7-$;
(v) $-C(O)-NR^7-$; or
(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino;

and a pharmaceutically acceptable carrier, wherein the compound of formula I is present in an amount effective for

inhibiting PAR activity.

38. The composition of claim 37, wherein X is double-bonded oxygen.

39. The composition of claim 37, wherein Y represents the atoms necessary to form a fused benzene or naphthalene ring.

40. The composition of claim 37, wherein Y is substituted with at least one non-hydrogen, non-interfering substituent.

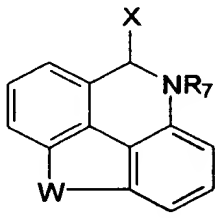
41. The composition of claim 37, wherein Z is: (i) $-CHR^2CHR^3-$, (ii) $-R^6C=CR^3-$, or (iii) $-R^2C=N-$.

42. The composition of claim 37, wherein Z is $-R^6C=CR^3-$ and forms a fused aromatic ring.

43. The composition of claim 37, wherein said ring is substituted with at least one non-hydrogen, non-interfering substituent.

44. The composition of claim 37, wherein R^7, when present, is hydrogen.

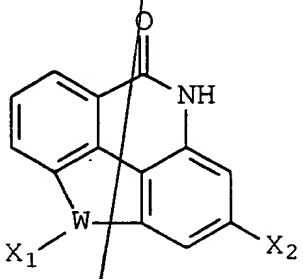
45. The composition of claim 37, wherein said compound has an isoquinoline, a pteridine, a phenanthridine, a phthalazine, or a quinazoline nucleus, or a tetracyclic bridging structure to ring Y, having the formula:



where W is -O-, -S-, $-NR^1-$, -CHO, -CHOH, or $CHNH_2$ where R^1 is hydrogen or lower alkyl.

46. The composition of claim 45, wherein said compound has a phenanthridine nucleus.

47. The composition of claim 37, wherein said compound has a tetracyclic bridging structure to ring Y, having the formula:



where W is -CH-; X_1 is hydrogen, hydroxy, or amino; and X_2 is hydrogen, amino, 1-piperidine, 1-piperazine, 1-imidazolidine, or hydroxy.

48. The composition of claim 37, wherein said compound has an IC_{50} for inhibiting poly(ADP-ribose) polymerase *in vitro* of 100 uM or lower.

49. The composition of claim 37, wherein said compound has an IC_{50} for inhibiting poly(ADP-ribose) polymerase *in vitro* of 25 uM or lower.

50. The composition of claim 37, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring substituted with a chloro group.

51. The composition of claim 37, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring substituted with a bromo group.

52. The composition of claim 37, wherein:

X is double bonded-oxygen;
Y is a fused benzene ring substituted with a nitro group; and
Z is $-R^6C=CR^3-$ where, R^6 and R^3, taken together, form a fused benzene ring substituted with an amino group.

53. The composition of claim 37, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring with a bridging substituent connecting the Z ring with the Y ring.

54. The composition of claim 37, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form a fused benzene ring substituted with an $-NO_2$ group.

55. The composition of claim 37, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring carrying at least one non-hydrogen, non-interfering substituent; and
Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form an unsubstituted fused benzene ring.

56. The composition of claim 37, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring carrying a chloro substituent; and
Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form a fused benzene ring substituted with a chloro group.

57. The composition of claim 37, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^6 and R^6, taken together, form a fused benzene ring substituted with a -Br and a $-NO_2$ group.

58. The composition of claim 37, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R_6C=CR^3-$ where R^6 and R^3, taken together, form a fused naphthalene ring.

59. The composition of claim 37, wherein said compound is 5(*H*)2-chloro-10-methylphenanthridin-6-one.

60. The composition of claim 37, wherein said compound is 5(*H*)2-nitro-10-methylphenanthridin-6-one.

61. The composition of claim 37, wherein said compound is 5(*H*)2-chloro-10-aminophenanthridin-6-one.

62. The composition of claim 37, wherein said compound is 5(*H*)2-nitro-10-aminophenanthridin-6-one.

63. The composition of claim 37, wherein said compound is 5(*H*)2-chloro-10-nitrophenanthridin-6-one.

64. The composition of claim 37, wherein said compound is 5(*H*)2,10-dinitrophenanthridin-6-one.

65. The composition of claim 37, wherein said compound is 5(*H*)2-chloro-10-hydroxyphenanthridin-6-one.

66. The composition of claim 37, wherein said compound is 5(*H*)2-nitro-10-hydroxyphenanthridin-6-one.

67. The composition of claim 37, wherein said compound is 5(*H*)2-chloro-10-bromophenanthridin-6-one.

68. The composition of claim 37, wherein said compound is 5(*H*)2-nitro-10-bromophenanthridin-6-one.

69. The composition of claim 37, wherein said compound

is 5(*H*)2-chlor[redacted]0-nitrosophenanthridin-6-[redacted]e.

70. The composition of claim 37, wherein said compound is 5(*H*)2-chloro-9,10-methlenedihydroxyphenan-thridin-6-one.

71. The composition of claim 37, wherein said compound is 5(*H*)2-nitro-9,10-methlenedihydroxy-2-phenan-thridin-6-one.

72. The composition of claim 37, wherein said composition is in the form of a capsule or tablet containing a single or divided dose of said agent, wherein said dose is sufficient to prevent or reduce the effects of vascular stroke or other neurodegenerative disease.

73. The composition of claim 37, wherein said composition is administered as a sterile solution, suspension or emulsion, in a single or divided dose.

74. The composition of claim 37, wherein said carrier comprises a biodegradable polymer.

75. The composition of claim 74, wherein said composition is a solid implant.

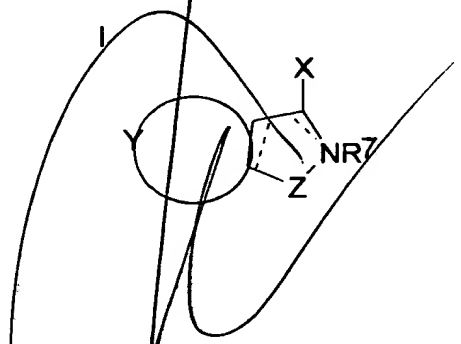
76. The composition of claim 74, wherein the biodegradable polymer releases the compound of formula I over a prolonged period of time.

77. The composition of claim 37, wherein said agent is present in an amount sufficient to treat or prevent neural tissue damage resulting from cerebral ischemia and reperfusion injury.

78. The pharmaceutical composition of claim 37 for treatment or prevention of diseases or conditions selected from the group consisting of tissue damage resulting from cell damage or death due to necrosis or apoptosis, neuronal mediated tissue damage or diseases, neural tissue damage

resulting from ischemia and reperfusion injury, neurological disorders and neurodegenerative diseases, vascular stroke, cardiovascular disorders, age-related macular degeneration, AIDS and other immune senescence diseases, arthritis, atherosclerosis, cachexia, cancer, degenerative diseases of skeletal muscle involving replicative senescence, diabetes, head trauma, immune senescence, inflammatory bowel disorders, muscular dystrophy, osteoarthritis, osteoporosis, chronic pain, acute pain, neuropathic pain, nervous insult, peripheral nerve injury, renal failure, retinal ischemia, septic shock, and skin aging, diseases or disorders relating to lifespan or proliferative capacity of cells, and diseases or disease conditions induced or exacerbated by cellular senescence; or radiosensitizing tumor cells.

79. A pharmaceutical composition comprising a compound of formula I containing at least one ring nitrogen:



or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

R^7, when present, is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino,

dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;
(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;
(iii) $-R^2C=N-$;
(iv) $-CR^2(OH)-NR^7-$;
(v) $-C(O)-NR^7-$; or
(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members; or

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino;

and a pharmaceutically acceptable carrier, wherein the compound of formula I is present in an amount effective for effecting neuronal activity.

80. The composition of claim 79, wherein the neuronal activity is not mediated by NMDA.

81. The composition of claim 79, wherein the neuronal activity is selected from the group consisting of stimulation of damaged neurons, promotion of neuronal regeneration, prevention of neurodegeneration, and treatment of a

neurological disorder.

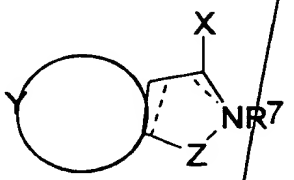
82. The composition of claim 81, wherein said neuronal activity is stimulation of damaged neurons resulting from cerebral ischemia or reperfusion injury.

83. The composition of claim 81, wherein the neurological disorder is selected from the group consisting of peripheral neuropathy caused by physical injury or disease state, traumatic brain injury, physical damage to the spinal cord, stroke associated with brain damage, demyelinating disease and neurological disorder relating to neurodegeneration.

84. The composition of claim 83, wherein the neurological disorder relating to neurodegeneration is selected from the group consisting of Alzheimer's disease, Parkinson's disease, Huntington's disease and amyotrophic lateral sclerosis.

85. The pharmaceutical composition of claim 83 for treatment or prevention of diseases or conditions selected from the group consisting of tissue damage resulting from cell damage or death due to necrosis or apoptosis, neuronal mediated tissue damage or diseases, neural tissue damage resulting from ischemia and reperfusion injury, neurological disorders and neurodegenerative diseases, vascular stroke, cardiovascular disorders, age-related macular degeneration, AIDS and other immune senescence diseases, arthritis, atherosclerosis, cachexia, cancer, degenerative diseases of skeletal muscle involving replicative senescence, diabetes, head trauma, immune senescence, inflammatory bowel disorders, muscular dystrophy, osteoarthritis, osteoporosis, chronic pain, acute pain, neuropathic pain, nervous insult, peripheral nerve injury, renal failure, retinal ischemia, septic shock, and skin aging, diseases or disorders relating to lifespan or proliferative capacity of cells, and diseases or disease conditions induced or exacerbated by cellular senescence.

86. A pharmaceutical composition comprising a compound of formula I containing at least one ring nitrogen:



I

or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

R^7, when present, is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$;

(v) $-C(O)-NR^7-$; or

(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the

ng nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino;

and a pharmaceutically acceptable carrier, wherein the compound of formula I is present in an amount effective for treating inflammatory bowel disorders.

87. The composition of claim 86, wherein said inflammatory bowel disorder is colitis.

88. The composition of claim 86, wherein said inflammatory bowel disorder is Crohn's disease.

89. A pharmaceutical composition comprising a compound of formula I containing at least one ring nitrogen:

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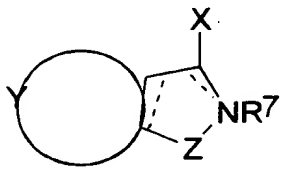

or a pharmaceutically acceptable base or acid addition salt,

hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

R^7, when present, is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$;

(v) $-C(O)-NR^7-$; or

(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle,

heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino;

and a pharmaceutically acceptable carrier, wherein the compound of formula I is present in an amount effective for treating cardiovascular disorders.

90. The composition of claim 89, wherein said cardiovascular disorder is selected from the group consisting of coronary artery disease, angina pectoris, myocardial infarction, cardiogenic shock, and cardiovascular tissue damage.

91. A pharmaceutical composition comprising a compound of formula I containing at least one ring nitrogen:

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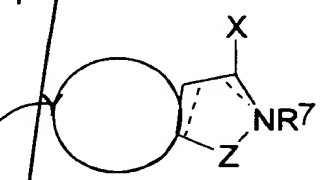

or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

R^7, when present, is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine,

imidazolidine, alkyl, aryl, or aralkyl;
(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;
(iii) $-R^2C=N-$;
(iv) $-CR^2(OH)-NR^7-$; or
(v) $-C(O)-NR^7-$;
(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino;

and a pharmaceutically acceptable carrier, wherein the compound of formula I is present in an amount effective for treating septic shock.

92. The composition of claim 91, wherein said septic shock is endotoxic shock.

93. A pharmaceutical composition comprising a compound of formula I containing at least one ring nitrogen:

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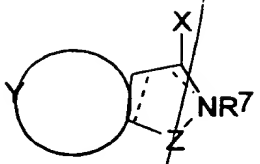


or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

R^7, when present, is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

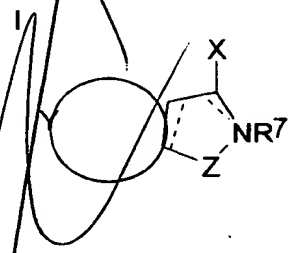
Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;
(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;
(iii) $-R^2C=N-$;
(iv) $-CR^2(OH)-NR^7-$; or
(v) $-C(O)-NR^7-$;
(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo,

droxy, piperidine, pipera[illegible]ne, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino;

and a pharmaceutical acceptable carrier, wherein the compound of formula I is present in an amount effective for treating diabetes.

94. A pharmaceutical composition comprising a compound of formula I containing at least one ring nitrogen:



or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

R^7, when present, is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position

and [redacted]s in the ortho-position [redacted]ative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring; wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$; or

(v) $-C(O)-NR^7-$;

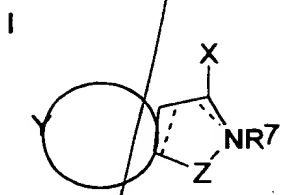
(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino;

and a pharmaceutically acceptable carrier, wherein the compound of formula I is present in an amount effective for treating arthritis.

95. A pharmaceutical composition comprising a compound

of formula I containing at least one ring nitrogen:



I

or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

R^7, when present, is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$; or

(v) $-C(O)-NR^7-$;

(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo,

droxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino;

and a pharmaceutically acceptable carrier, wherein the compound of formula I is present in an amount effective for treating cancer.

96. The composition of claim 95, wherein said cancer is selected from the group consisting of: ACTH-producing tumors, acute lymphocytic leukemia, acute nonlymphocytic leukemia, cancer of the adrenal cortex, bladder cancer, brain cancer, breast cancer, cervix cancer, chronic lymphocytic leukemia, chronic myelocytic leukemia, colorectal cancer, cutaneous T-cell lymphoma, endometrial cancer, esophageal cancer, Ewing's sarcoma, gallbladder cancer, hairy cell leukemia, head & neck cancer, Hodgkin's lymphoma, Kaposi's sarcoma, kidney cancer, liver cancer, lung cancer (small and/or non-small cell), malignant peritoneal effusion, malignant pleural effusion, melanoma, mesothelioma, multiple myeloma, neuroblastoma, non-Hodgkin's lymphoma, osteosarcoma, ovary cancer, ovary (germ cell) cancer, prostate cancer, pancreatic cancer, penis cancer, retinoblastoma, skin cancer, soft-tissue sarcoma, squamous cell carcinomas, stomach cancer, testicular cancer, thyroid cancer, trophoblastic neoplasms, cancer of the uterus, vaginal cancer, cancer of the vulva and Wilm's tumor.

97. A pharmaceutical composition comprising a compound of formula I containing at least one ring nitrogen:

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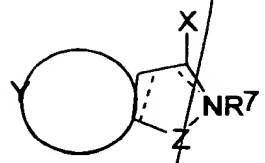

or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

R^7, when present, is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$;

(v) $-C(O)-NR^7-$; or

(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, -

NO_2, [redacted]OR^7, or $-NR^7R^8$ where R^8 is [redacted]ndependently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino;

and a pharmaceutically acceptable carrier, wherein the compound of formula I is present in an amount effective for radiosensitizing tumor cells.

98. The composition of claim 97, wherein said tumor cells are selected from the group consisting of: ACTH-producing tumors, acute lymphocytic leukemia, acute nonlymphocytic leukemia, cancer of the adrenal cortex, bladder cancer, brain cancer, breast cancer, cervix cancer, chronic lymphocytic leukemia, chronic myelocytic leukemia, colorectal cancer, cutaneous T-cell lymphoma, endometrial cancer, esophageal cancer, Ewing's sarcoma, gallbladder cancer, hairy cell leukemia, head & neck cancer, Hodgkin's lymphoma, Kaposi's sarcoma, kidney cancer, liver cancer, lung cancer (small and/or non-small cell), malignant peritoneal effusion, malignant pleural effusion, melanoma, mesothelioma, multiple myeloma, neuroblastoma, non-Hodgkin's lymphoma, osteosarcoma, ovary cancer, ovary (germ cell) cancer, prostate cancer, pancreatic cancer, penis cancer, retinoblastoma, skin cancer, soft-tissue sarcoma, squamous cell carcinomas, stomach cancer, testicular cancer, thyroid cancer, trophoblastic neoplasms, cancer of the uterus, vaginal cancer, cancer of the vulva and Wilm's tumor.

99. A method of inhibiting PARP activity comprising administering a compound of formula I containing at least one ring nitrogen:

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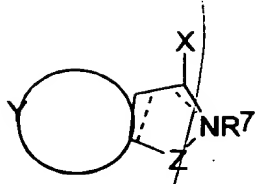


or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

when R^7 is present, it is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$; or

(v) $-C(O)-NR^7-$;

(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo,

droxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino.

100. The method of claim 99, wherein X is double-bonded oxygen.

101. The method of claim 99, wherein Y has at least one site of unsaturation.

102. The method of claim 99, wherein Y represents the atoms necessary to form a fused benzene or naphthalene ring.

103. The method of claim 99, wherein Y is substituted with at least one non-hydrogen, non-interfering substituent.

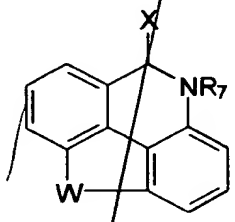
104. The method of claim 99, wherein Z is: (i) $-CHR^2CHR^3-$, (ii) $-R^6C=CR^3-$, or (iii) $-R^2C=N-$.

105. The method of claim 99, wherein Z is $-R^6C=CR^3-$ and forms a fused aromatic ring.

106. The method of claim 99, wherein said ring is substituted with at least one non-hydrogen, non-interfering substituent.

107. The method of claim 99, wherein, when R^7 is present, it is hydrogen.

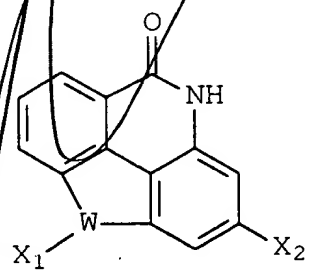
108. The method of claim 99, wherein said compound has an isoquinoline, a pteridine, a phenanthridine, a phthalazine, or a quinazoline nucleus, or a tetracyclic bridging structure to ring Y, having the formula:



where W is -O-, -S-, $-NR^1-$, -CHO, -CHOH, or $CHNH_2$ where R^1 is hydrogen or lower alkyl.

109. The method of claim 99, wherein said compound has a phenanthridine nucleus.

110. The composition of claim 99, wherein said compound has a tetracyclic bridging structure to ring Y, having the formula:



where W is -CH-; X_1 is hydrogen, hydroxy, or amino; and X_2 is hydrogen, amino, 1-piperidine, 1-piperazine, 1-imidazolidine, or hydroxy.

111. The method of claim 99, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a

fused benzene ring substituted with a chloro group.

112. The method of claim 99, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring substituted with a bromo group.

113. The method of claim 99, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring substituted with a nitro group; and
Z is $-R^6C=CR^3-$ where, R^6 and R^3, taken together, form a fused benzene ring substituted with an amino group.

114. The method of claim 99, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring with a bridging substituent connecting the Z ring with the Y ring.

115. The method of claim 99, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form a fused benzene ring substituted with an $-NO_2$ group.

116. The method of claim 99, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring carrying at least one non-hydrogen, non-interfering substituent; and
Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form an unsubstituted fused benzene ring.

117. The method of claim 99, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring carrying a chloro substituent; and

Z is $-R^6C=$ [redacted] where R^6 and R^3, taken together, form a fused benzene ring substituted with a chloro group.

118. The method of claim 99, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^6 and R^6, taken together, form a fused benzene ring substituted with a -Br and a $-NO_2$ group.

119. The method of claim 99, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R_6C=CR^3-$ where R^6 and R^3, taken together, form a fused naphthalene ring.

120. The method of claim 99, wherein said compound has an IC_{50} for inhibiting poly(ADP-ribose) polymerase *in vitro* of 100 uM or lower.

121. The method of claim 99, wherein said compound has an IC_{50} for inhibiting poly(ADP-ribose) polymerase *in vitro* of 25 uM or lower.

122. The method of claim 99, wherein said compound is 5(*H*)2-chloro-10-methylphenanthridin-6-one.

123. The method of claim 99, wherein said compound is 5(*H*)2-nitro-10-methylphenanthridin-6-one.

124. The method of claim 99, wherein said compound is 5(*H*)2-chloro-10-aminophenanthridin-6-one.

125. The method of claim 99, wherein said compound is 5(*H*)2-nitro-10-aminophenanthridin-6-one.

126. The method of claim 99, wherein said compound is 5(*H*)2-chloro-10-nitrophenanthridin-6-one.

127. The method of claim 99, wherein said compound is 5(*H*)2,10-dinitrophenanthridin-6-one.

128. The method of claim 99, wherein said compound is 5(*H*)2-chloro-10-hydroxyphenanthridin-6-one.

129. The method of claim 99, wherein said compound is 5(*H*)2-nitro-10-hydroxyphenanthridin-6-one.

130. The method of claim 99, wherein said compound is 5(*H*)2-chloro-10-bromophenanthridin-6-one.

131. The method of claim 99, wherein said compound is 5(*H*)2-nitro-10-bromophenanthridin-6-one.

132. The method of claim 99, wherein said compound is 5(*H*)2-chloro-10-nitrosophenanthridin-6-one.

133. The method of claim 99, wherein said compound is 5(*H*)2-chloro-9,10-methlenedihydroxyphenanthridin-6-one.

134. The method of claim 99, wherein said compound is 5(*H*)2-nitro-9,10-methlenedihydroxyphenanthridin-6-one.

135. The method of claim 99, wherein said composition is in the form of a capsule or tablet containing a single or divided dose of said compound, wherein said dose is sufficient to prevent or reduce the effects of vascular stroke or other neurodegenerative disease.

136. The method of claim 99, wherein said composition is administered as a sterile solution, suspension or emulsion, in a single or divided dose.

137. The method of claim 99, wherein said composition is administered as a solid implant capable of releasing the

compound over a prolonged period of time.

138. The method of claim 99, wherein said compound is present in an amount sufficient to treat or prevent neural tissue damage resulting from cerebral ischemia and reperfusion injury.

139. A method of effecting a neuronal activity in an animal comprising administering to said animal an effective amount of a compound of formula I containing at least one ring nitrogen:

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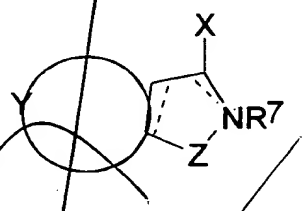

or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

when R^7 is present, it is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;
(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine,

piperidine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$; or

(v) $-C(O)-NR^7-$;

(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino.

140. The method of claim 139, wherein the neuronal activity is not mediated by NMDA.

141. The method of claim 139, wherein the neuronal activity is selected from the group consisting of stimulation of damaged neurons, promotion of neuronal regeneration, prevention of neurodegeneration, and treatment of a neurological disorder.

142. The method of claim 141, wherein said neuronal activity is stimulation of damaged neurons resulting from cerebral ischemia or reperfusion injury.

143. The method of claim 141, wherein the neurological disorder is selected from the group consisting of peripheral neuropathy caused by physical injury or disease state, traumatic brain injury, physical damage to the spinal cord, stroke associated with brain damage, demyelinating disease and neurological disorder relating to neurodegeneration.

144. The method of claim 143, wherein the neurological disorder relating to neurodegeneration is selected from the group consisting of Alzheimer's disease, Parkinson's disease, Huntington's disease and amyotrophic lateral sclerosis.

145. A method of treating an inflammatory bowel disorder in an animal comprising administering to said animal an effective amount of a compound of formula I containing at least one ring nitrogen:

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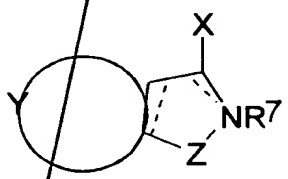

or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

when R^7 is present, it is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine,

imidazolidine, alkyl, aryl, or aralkyl;
(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;
(iii) $-R^2C=N-$;
(iv) $-CR^2(OH)-NR^7-$; or
(v) $-C(O)-NR^7-$;
(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino.

146. The method of claim 145, wherein said bowel disorder is colitis.

147. The method of claim 145, wherein said inflammatory bowel disorder is Crohn's disease.

148. A method of treating a cardiovascular disorder in an animal comprising administering to said animal an

effective amount of a compound of formula I containing at least one ring nitrogen:

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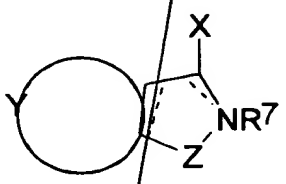


or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

when R^7 is present, it is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$; or

(v) $-C(O)-NR^7-$;

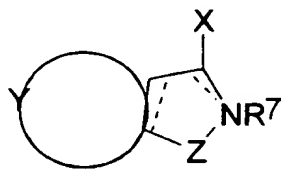
(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the

ng nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino.

149. The method of claim 148, wherein said cardiovascular disorder is selected from the group consisting of coronary artery disease, angina pectoris, myocardial infarction, cardiogenic shock, and cardiovascular tissue damage.

150. A method of treating septic shock in an animal comprising administering to said animal an effective amount of a compound of formula I containing at least one ring nitrogen:



or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double bonded oxygen or -OH;
when R^7 is present, it is hydrogen or lower alkyl;
Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and
Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;
(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;
(iii) $-R^2C=N-$;
(iv) $-CR^2(OH)-NR^7-$; or
(v) $-C(O)-NR^7-$;
(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino.

151. The method of claim 150, wherein said septic shock is endotoxic shock.

152. A method of treating diabetes in an animal comprising administering to said animal an effective amount of a compound of formula I containing at least one ring nitrogen:

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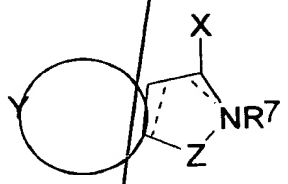

or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

when R^7 is present, it is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring

members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$; or

(v) $-C(O)-NR^7-$;

(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino.

153. A method of treating arthritis in an animal comprising administering to said animal an effective amount of a compound of formula I containing at least one ring nitrogen:

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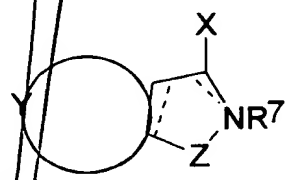

or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

when R^7 is present, it is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-,

bi- tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$;

(v) $-C(O)-NR^7-$; or

(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino.

154. A method of treating cancer in an animal comprising administering to said animal an effective amount of a compound of formula I containing at least one ring

nitrogen:

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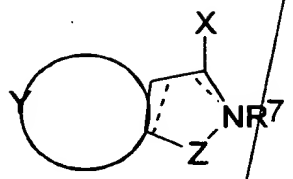

or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

when R^7 is present, it is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$;

(v) $-C(O)-NR^7-$; or

(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently

hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino.

155. The method of claim 154, wherein said cancer is selected from the group consisting of: ACTH-producing tumors, acute lymphocytic leukemia, acute nonlymphocytic leukemia, cancer of the adrenal cortex, bladder cancer, brain cancer, breast cancer, cervix cancer, chronic lymphocytic leukemia, chronic myelocytic leukemia, colorectal cancer, cutaneous T-cell lymphoma, endometrial cancer, esophageal cancer, Ewing's sarcoma, gallbladder cancer, hairy cell leukemia, head & neck cancer, Hodgkin's lymphoma, Kaposi's sarcoma, kidney cancer, liver cancer, lung cancer (small and/or non-small cell), malignant peritoneal effusion, malignant pleural effusion, melanoma, mesothelioma, multiple myeloma, neuroblastoma, non-Hodgkin's lymphoma, osteosarcoma, ovary cancer, ovary (germ cell) cancer, prostate cancer, pancreatic cancer, penis cancer, retinoblastoma, skin cancer, soft-tissue sarcoma, squamous cell carcinomas, stomach cancer, testicular cancer, thyroid cancer, trophoblastic neoplasms, cancer of the uterus, vaginal cancer, cancer of the vulva and Wilm's tumor.

156. A process for preparing a compound of formula I containing at least one ring nitrogen:

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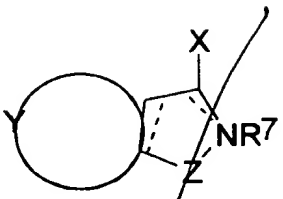


or a pharmaceutically acceptable base or acid addition salt, hydrate, ester, solvate, prodrug, metabolite, stereoisomer, or mixtures thereof, wherein:

X is double-bonded oxygen or -OH;

when R^7 is present, it is hydrogen or lower alkyl;

Y represents the atoms necessary to form a fused mono-, bi- or tricyclic, carbocyclic or heterocyclic ring, wherein each individual ring has 5-6 ring member atoms; and

Z is (i) $-CHR^2CHR^3-$ wherein R^2 is in the meta-position and R^3 is in the ortho-position relative to said ring nitrogen of formula I, and R^2 and R^3 are independently hydrogen, hydroxy, amino, dimethylamino, nitro, piperidine, piperazine, imidazolidine, alkyl, aryl, or aralkyl;

(ii) $-R^6C=CR^3-$ wherein R^6 is meta to the ring nitrogen, and R^3 and R^6 are independently hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, amino, dimethylamino, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^6 and R^3, taken together, form a fused aromatic ring, wherein each individual ring has 5-6 ring members;

(iii) $-R^2C=N-$;

(iv) $-CR^2(OH)-NR^7-$;

(v) $-C(O)-NR^7-$; or

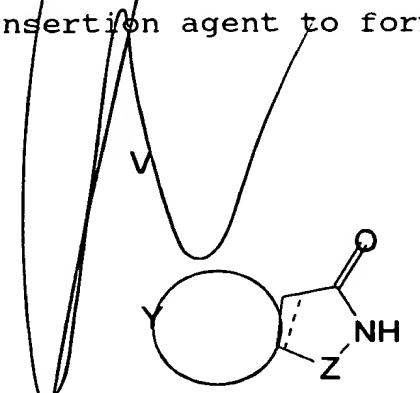
(vi) $-NR^9-C(O)-CHR^{10}-$ wherein R^{10} is ortho to the ring nitrogen, and R^9 and R^{10} are independently

hydrogen, lower alkyl, aryl, aralkyl, halo, hydroxy, piperidine, piperazine, imidazolidine, $-NO_2$, $-COOR^7$, or $-NR^7R^8$ where R^8 is independently hydrogen or C_1-C_9 alkyl, or R^9 and R^{10}, taken together, form a fused ring, wherein each individual ring has 5-7 ring members;

wherein said alkyl, aryl, and aralkyl, are substituted at one or more positions with hydrogen, hydroxy, halo, haloalkyl, alkoxy, alkenoxy, alkaryloxy, aryloxy, arylalkoxy, cyano, amino, imino, sulfhydryl, thioalkyl, carboxy, carbocycle, heterocycle, lower alkyl, lower alkenyl, cycloalkyl, aryl, arylalkyl, haloaryl, amino, nitro, nitroso, dimethylamino; and said process comprising the step of reacting a compound of formula IV:

IV

with a nitrogen-insertion agent to form a compound of formula V:



157. The process of claim 156, wherein said compound

has an IC_{50} for inhibiting poly(ADP-ribose) polymerase *in vitro* of 100 μM or lower.

158. The process of claim 156, wherein said compound has an IC_{50} for inhibiting poly(ADP-ribose) polymerase *in vitro* of 25 μM or lower.

159. The process of claim 156, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring substituted with a chloro group.

160. The process of claim 156, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring substituted with a bromo group.

161. The process of claim 156, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring substituted with a nitro group; and
Z is $-R^6C=CR^3-$ where, R^6 and R^3, taken together, form a fused benzene ring substituted with an amino group.

162. The process of claim 156, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^3 and R^6, taken together, form a fused benzene ring with a bridging substituent connecting the Z ring with the Y ring.

163. The process of claim 156, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form a fused benzene ring substituted with an $-NO_2$ group.

164. The process of claim 156, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring carrying at least one non-hydrogen, non-interfering substituent; and
Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form an unsubstituted fused benzene ring.

165. The process of claim 156, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring carrying a chloro substituent; and
Z is $-R^6C=CR^3-$ where R^6 and R^3, taken together, form a fused benzene ring substituted with a chloro group.

166. The process of claim 156, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R^6C=CR^3-$ where R^6 and R^6, taken together, form a fused benzene ring substituted with a -Br and a -NO_2 group.

167. The process of claim 156, wherein:
X is double bonded-oxygen;
Y is a fused benzene ring; and
Z is $-R_6C=CR^3-$ where R^6 and R^3, taken together, form a fused naphthalene ring.

168. The process of claim 156, wherein said compound is 5(*H*)2-chloro-10-methylphenanthridin-6-one.

169. The process of claim 156, wherein said compound is 5(*H*)2-nitro-10-methyl-2-phenanthridin-6-one.

170. The process of claim 156, wherein said compound is 5(*H*)2-chloro-10-amino-phenanthridin-6-one.

171. The process of claim 156, wherein said compound is 5(*H*)2-nitro-10-amino-phenanthridin-6-one.

172. The process of claim 156, wherein said compound is 5(*H*)2-chloro-10-nitrophenanthridin-6-one.

173. The process of claim 156, wherein said compound is 5(*H*)2,10-dinitrophenanthridin-6-one.

174. The process of claim 156, wherein said compound is 5(*H*)2-chloro-10-hydroxyphenanthridin-6-one.

175. The process of claim 156, wherein said compound is 5(*H*)2-nitro-10-hydroxyphenanthridin-6-one.

176. The process of claim 156, wherein said compound is 5(*H*)2-chloro-10-bromophenanthridin-6-one.

177. The process of claim 156, wherein said compound is 5(*H*)2-nitro-10-bromophenanthridin-6-one.

178. The process of claim 156, wherein said compound is 5(*H*)2-chloro-10-nitrosophenanthridin-6-one.

179. The process of claim 156, wherein said compound is 5(*H*)2-chloro-9,10-methlenedihydroxyphenan-thridin-6-one.

180. The process of claim 156, wherein said compound is 5(*H*)2-nitro-9,10-methlenedihydroxyphenan-thridin-6-one.

181. The process of claim 156, wherein said nitrogen insertion agent comprises a mixture of NaN_3 and a strong acid.

182. The process of claim 181, wherein said acid is H_2SO_4.

183. The compounds, compositions, methods, and processes as described herein.